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UniStar
NUCLEAR ENERGY

10 CFR 50.4
10 CFR 52.79

April 30, 2009

UN#09-226

ATTN: Document Control Desk
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Subject: UniStar Nuclear Energy, NRC Docket No. 52-016
Response to Request for Additional Information for the
Calvert Cliffs Nuclear Power Plant, Unit 3,
RAI No. 50, Initial Plant Test Program

Reference: John Rycyna (NRC) to Robert Poche (UniStar), "RAI No 50 CQVP 1232.doc (PUBLIC)" email dated March 18, 2009

The purpose of this letter is to respond to the request for additional information (RAI) identified in the NRC e-mail correspondence to UniStar Nuclear Energy, dated March 18, 2009 (Reference). This RAI addresses the Initial Plant Test Program, as discussed in Section 14.2 of the Final Safety Analysis Report (FSAR), as submitted in Part 2 of the CCNPP Unit 3 Combined License Application (COLA), Revision 4.

The enclosure provides our response to RAI No. 50, Questions 14.02-26, 14.02-27, and 14.02-28, which includes revised COLA content. A Licensing Basis Document Change Request has been initiated to incorporate this change in a future revision of the COLA.

Our response to Questions 14.02-26, 14.02-27, and 14.02-28 do not include any new regulatory commitments.

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NRO

If there are any questions regarding this transmittal, please contact me at (410)-470-4205, or Mr. Michael J. Yox at (410) 495-2436.

I declare under penalty of perjury that the foregoing is true and correct.

Executed on April 30, 2009

Christian Clement
for Greg Gibson

Greg Gibson

Enclosure: Response to NRC Request for Additional Information, RAI No. 50, Questions 14.02-26, 14.02-27, and 14.02-28, Initial Plant Test Program, Calvert Cliffs Nuclear Power Plant, Unit 3

cc: John Rycyna, NRC Project Manager, U.S. EPR COL Application
Laura Quinn, NRC Environmental Project Manager, U.S. EPR COL Application
Getachew Tesfaye, NRC Project Manager, U.S. EPR DC Application (w/o enclosure)
Loren Plisco, Deputy Regional Administrator, NRC Region II (w/o enclosure)
Silas Kennedy, U.S. NRC Resident Inspector, CCNPP, Units 1 and 2
U.S. NRC Region I Office

Enclosure

Response to NRC Request for Additional Information, RAI No. 50, Questions 14.02-26, 14.02-27, and 14.02-28, Initial Plant Test Program, Calvert Cliffs Nuclear Power Plant, Unit 3

RAI No. 50

Question 14.02-26

RG 1.206 Section C.I.14.2.12, in part, states that test abstracts should specify the prerequisites and major plant operating conditions necessary for each test (such as power level and mode of operation of major control systems). The abstracts should also contain sufficient information to justify the specified test method if such method does not subject the structure/system/component (SSC) under test to representative design operating conditions. In addition, the abstracts should identify pertinent precautions for individual tests, as necessary (e.g., minimum flow requirements or reactor power level that must be maintained).

The test abstracts in Section 14.2.14 of the CCNPP3 COLA do not specify the major plant operating conditions necessary for each test. Furthermore, the abstracts should identify pertinent precautions for individual tests, as necessary.

The NRC staff requests that UniStar revise the test abstracts in Section 14.2.14 of the CCNPP3 COLA to include the major plant operating conditions necessary for each test, sufficient information to justify the specified test method if such method does not subject the SSC under test to representative design operating conditions, and pertinent precautions for individual tests, as necessary.

Response

Major plant operating conditions necessary for each test and pertinent precautions for individual tests are identified in previous RAI responses[1,2,3] to the NRC.

The test methods specified in those responses subject Systems, Structures and Components to representative operating design conditions. These test methods will verify major components of a particular system function properly and that the overall system functions as described in their respective sections of the FSAR.

FSAR Section 14.2.14.10 will be revised to indicate the specific power level prerequisite for performing cooling tower acceptance testing.

COLA Impact:

FSAR Section 14.2.14.10 will be updated as follows in a future revision of the COLA:

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1 Letter to Document Control Desk (NRC) from G. Gibson (UniStar), "UniStar Nuclear Energy, NRC Docket No. 52-016 Submittal of Response to Requests for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3 - FSAR Chapter 14" dated October 31, 2008; UniStar Reference #08-057

2 Letter to Document Control Desk (NRC) from G. Gibson (UniStar), "UniStar Nuclear Energy, NRC Docket No. 52-016 Response to Request for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3 Follow-up Response to RAIs 14 and 15, Questions 14-02-1, 14.02-2, 14.02-3, and 14.02-4" dated December 19, 2008; UniStar Reference #08-094

3 Letter to Document Control Desk (NRC) from G. Gibson (UniStar), "UniStar Nuclear Energy, NRC Docket No. 52-016 Response to Request for Additional Information for the Calvert Cliffs Nuclear Power Plant, Unit 3, RAI No. 28, Revision 2, Questions 14.02-14 through 14.02-24, Initial Plant Test Program - Design Certification and New License Applicants" dated December 22, 2008; UniStar Reference #08-095

14.2.14.10 Cooling Tower Acceptance

1. OBJECTIVES

   a. To demonstrate the Cooling Tower is capable of rejecting the design heat load.

2. PREREQUISITES

   Cooling Tower acceptance testing shall be performed during Phase IV power ascension testing. The test shall be performed at ≥ 98 percent reactor power.

Question 14.02-27

Section C.I.14.2.7 of RG 1.206 states that the COL applicant should provide a discussion of the initial test program, which demonstrates consistency with the regulatory positions in RG 1.68. In so doing, the COL applicant should include a list of all regulatory guides applicable to development of the initial test programs. Calvert Cliffs COL Section 14.2.7, "Conformance of Test Programs with Regulatory Guides," incorporates by reference the US EPR FSAR Section 14.2.7. However, the list provided in the US EPR FSAR does not include RG 1.136 "Design Limits, Loading Combinations, Materials, Construction, and Testing of Concrete Containments," which is listed in Section C.I.14.2.7 of RG 1.206. Accordingly, the staff requests that the applicant clarify its position regarding the omission of RG 1.136, in either including and conforming with RG 1.136, or in justifying an alternative.

Response

Calvert Cliffs Nuclear Power Plant (CCNPP) Unit 3 COLA FSAR Section 14.2.7 incorporates U.S. EPR FSAR Section 14.2.7 with no departures or supplements.

In AREVA response to U.S. EPR Design Certification Application RAI 143[4], the list of applicable regulatory guides in Section 14.2.7 was updated to include Regulatory Guide (RG) 1.136. Therefore, RG 1.136 is incorporated by reference into the CCNPP Unit 3 FSAR.

Additionally, CCNPP Unit 3 FSAR Table 1.9-2 and FSAR Section 3.8.1.2.5 and 3.8.1.3 discuss conformance of CCNPP Unit 3 to RG 1.136, R3.

COLA Impact:

The response to the question requires no modification to the COLA.

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[4] R. Pederson (AREVA) to G. Tesfaye (NRC), "Response to U.S. EPR Design Certification Application RAI No. 143, supplement, email dated February 13, 2009

Question 14.02-28

RG 1.206 C.I.14.2.11 states that a COL applicant should identify and cross-reference each test (or portion thereof) required to be completed before initial fuel loading that is designed to satisfy the requirements for completing ITAAC in accordance with 10 CFR 52.99(a).

Section 14.2.11 of the application does not include information to address the methods to identify and cross-reference all or part of each test that is required to be completed before initial fuel loading that is designed to satisfy the requirements of completing ITAAC in accordance with 10 CFR 52.99(a).

Therefore, the staff requests that the applicant revise Section 14.2.11 of its FSAR to include the provisions described above to ensure that required tests completed before initial fuel loading and designed to satisfy the requirements of ITAAC are adequately identified, or to justify an alternative consistent with 10 CFR 52.99(a).

Response

In AREVA response to U.S. EPR RAI 189[5], the COL information item in Section 14.2.11 of the Design Certification Application was revised to incorporate the following sentence, "Identify and cross reference each test (or portion thereof) required to be completed before initial fuel loading and that is designed to satisfy the requirements for completing ITAAC." FSAR Section 14.2.11 of the CCNPP Unit 3 COLA will be revised to reflect the revision of the U.S. EPR Design Certification Application.

COLA Impact:

FSAR Section 14.2 will be updated as follows in a future revision of the COLA:

14.2.11 TEST PROGRAM SCHEDULE

The U.S. EPR FSAR includes the following COL Item in Section 14.2.11:

A COL applicant that references the U.S. EPR certified design will develop a test program that considers the following ~~seven~~ eight guidance components:

- The applicant should allow at least nine months to conduct preoperational testing.
- The applicant should allow at least three months to conduct startup testing, including fuel loading, low-power tests, and power-ascension tests.
- Plant safety will not be dependent on the performance of untested SSCs during any phase of the startup test program.
- Surveillance test requirements will be completed in accordance with plant Technical Specification requirements for SSC operability before changing plant modes.

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[5] R. Pederson (AREVA) to G. Tesfaye (NRC), "Response to U.S. EPR Design Certification Application RAI No. 189, FSAR Ch. 14" email dated March 30, 2009

- Overlapping test program schedules (for multiunit sites) should not result in significant divisions of responsibilities or dilutions of the staff provided to implement the test program.

- The sequential schedule for individual startup tests should establish, insofar as practicable, that test requirements should be completed prior to exceeding 25 percent power for SSC that are relied on to prevent, limit, or mitigate the consequences of postulated accidents.

- Approved test procedures should be in a form suitable for review by regulatory inspectors at least 60 days prior to their intended use or at least 60 days prior to fuel loading for fuel loading and startup test procedures.

- Identify and cross reference each test (or portion thereof) required to be completed before initial fuel loading and that is designed to satisfy the requirements for completing ITAAC.

This COL item is addressed as follows:

A site-specific test program shall be developed that considers the components listed above and shall provide copies of approved test procedures to the NRC at least 60 days prior to their scheduled performance date.

FSAR Table 1.8-2 of the CCNPP Unit 3 COLA will be updated as follows in a future revision of the COLA:

Item No.	Description	Section
14.2-2	A COL applicant that references the U.S. EPR certified design will develop a test program that considers the following ~~seven~~ eight guidance components: 1) The applicant should allow at least 9 months to conduct preoperational testing. 2) The applicant should allow at least 3 months to conduct startup testing, including fuel loading, low-power tests, and power-ascension tests. 3) Plant safety will not be dependent on the performance of untested SSCs during any phase of the startup test program. 4) Surveillance test requirements will be completed in accordance with plant Technical Specification requirements for SSC operability before changing plant modes. 5) Overlapping test program schedules (for multiunit sites) should not result in significant divisions of responsibilities or dilutions of the staff provided to implement the test program. 6) The sequential schedule for individual startup tests should establish, insofar as practicable, that test requirements should be completed prior to exceeding 25 percent power for SSC that are relied on to prevent, limit, or mitigate the consequences of postulated accidents. 7) Approved test procedures should be in a form suitable for review by regulatory inspectors at least 60 days prior to their intended use or at least 60 days prior to fuel loading for fuel loading and startup test procedures. 8) Identify and cross reference each test (or portion thereof) required to be completed before initial fuel loading and that is designed to satisfy the requirements for completing ITAAC.	14.2.11